# CLAIMS

1. An electronic appliance comprising:

an acceleration detecting section for detecting the acceleration in a first direction, the acceleration in a second direction orthogonal relative to the first direction and the acceleration in a third direction orthogonal relative to the first direction and the second direction;

a synthetic acceleration vector detecting section for detecting the size of the synthetic acceleration vector formed by synthesizing the acceleration in the first direction, the acceleration in the second direction and the acceleration in the third direction detected by the acceleration detecting section;

a storage section for storing the size of the synthetic acceleration vector detected by the synthetic acceleration vector detecting section, associating it with the clock time of the detection by the synthetic acceleration vector detecting section of the acceleration in the first direction, the acceleration in the second direction and the acceleration in the third direction;

a first stability computing section for computing the stability of the synthetic accelerations in a predetermined time period at and near clock time T0 when the size of the synthetic acceleration vector as detected by the synthetic acceleration vector detecting section becomes equal to a predetermined value $\underline{a}$ ($a \geq 0$);

a second stability computing section for retrieving the sizes of the synthetic acceleration vectors stored in the storage section, reading out clock time T1 that is associated with the synthetic acceleration vector of a predetermined value b (b > a), closest to the clock time T0 and preceding the clock time T0 from the storage section and computing the stability of the synthetic accelerations in a predetermined time period at and near the clock time T1; and

a fall determining section for determining that the electronic appliance is falling when the first stability is found within a predetermined range and the second stability is found within another predetermined range.

2. The apparatus according to claim 1, further comprising:

a recording/reproduction section for storing data in and/or reproducing data from a recording medium; and

a retracting section for retracting the recording/reproduction section from the position where it is located opposite to the recording medium when it is determined by the fall determining section that the electronic appliance is falling.

3. The apparatus according to claim 2, wherein

the recording medium is a hard disc provided in the electronic appliance; and

the recording/reproduction section is a magnetic head for recording data in and/or reproducing data from the hard disc.

4. The apparatus according to claim 1, wherein the first stability computing

section computes the stability of the synthetic accelerations in a predetermined time period at or near the clock time T0 when the sizes of the synthetic acceleration vectors detected by the synthetic acceleration vector detecting section becomes equal to 0.

5. A fall detection method for detecting a fall of an electronic appliance comprising:

an acceleration detecting step of detecting the acceleration in a first direction, the acceleration in a second direction orthogonal relative to the first direction and the acceleration in a third direction orthogonal relative to the first direction and the second direction;

a synthetic acceleration vector detecting step of detecting the size of the synthetic acceleration vector formed by synthesizing the acceleration in the first direction, the acceleration in the second direction and the acceleration in the third direction detected in the acceleration detecting step;

a storing step of storing the size of the synthetic acceleration vector detected in the synthetic acceleration vector detecting step, associating it with the clock time of the detection in the synthetic acceleration vector detecting step of the acceleration in the first direction, the acceleration in the second direction and the acceleration in the third direction;

a first stability computing step of computing the stability of the synthetic acceleration in a predetermined time period at and near clock time T0 when the size

of the synthetic acceleration vector as detected in the synthetic acceleration vector detecting step becomes equal to a predetermined value a ($a \geq 0$);

a second stability computing step of retrieving the sizes of the synthetic acceleration vectors stored in the storing step, reading out clock time T1 that is associated with the synthetic acceleration vector of a predetermined value b ($b > a$), closest to the clock time T0 and preceding the clock time T0 from the storage step and computing the stability of the synthetic accelerations in a predetermined time period at and near the clock time T1; and

a fall determining step of determining that the electronic appliance is falling when the first stability is found within a predetermined range and the second stability is found within another predetermined range.

6. The method according to claim 5, wherein the first stability computing step is adapted to compute the stability of the synthetic accelerations in a predetermined time period at or near the clock time T0 when the sizes of the synthetic acceleration vectors detected by the synthetic acceleration vector detecting section becomes equal to 0.

7. A contents reproduction apparatus comprising:

a reproduction section for reproducing data from a disc-shaped recording medium;

a buffer memory for temporarily buffering the data reproduced from the reproduction section;

a decoding section for decoding and outputting the data accumulated in the buffer memory;

an acceleration detecting section for detecting the acceleration in a first direction, the acceleration in a second direction orthogonal relative to the first direction and the acceleration in a third direction orthogonal relative to the first direction and the second direction;

a synthetic acceleration vector detecting section for detecting the size of the synthetic acceleration vector formed by synthesizing the acceleration in the first direction, the acceleration in the second direction and the acceleration in the third direction detected by the acceleration detecting section;

a storage section for storing the size of the synthetic acceleration vector detected by the synthetic acceleration vector detecting section, associating it with the clock time of the detection by the synthetic acceleration vector detecting section of the acceleration in the first direction, the acceleration in the second direction and the acceleration in the third direction;

a first stability computing section for computing the stability of the synthetic acceleration in a predetermined time period at and near clock time T0 when the size of the synthetic acceleration vector as detected by the synthetic acceleration vector detecting section becomes equal to a predetermined value $\underline{a}$ ($a \geq 0$);

a second stability computing section for retrieving the sizes of the synthetic

acceleration vectors stored in the storage section, reading out clock time T1 that is associated with the synthetic acceleration vector of a predetermined value b (b > a), closest to the clock time T0 and preceding the clock time T0 from the storage section and computing the stability of the synthetic accelerations in a predetermined time period at and near the clock time T1;

a fall determining section for determining that the electronic appliance is falling when the first stability is found within a predetermined range and the second stability is found within another predetermined range; and

a retracting section for retracting the head reading signals from a disc-shaped recording medium from the disc-shaped recording medium when it is determined by the fall determining section that the electronic appliance is falling.

8. The apparatus according to claim 7, wherein

the reproduction section reads out data from the disc-shaped recording medium and transfers them to the buffer memory when the amount of data accumulated in the buffer memory becomes not greater than a predetermined amount; and

the fall determining section determines if the electronic appliance is falling or not when the reproduction section is reading data.

9. The apparatus according to claim 7, wherein the decoding section keeps on reading out data from the buffer memory and decoding the read out data when the fall determining section determines that the electronic appliance is falling.